

FINAL OU1 - REMEDIAL ACTION LIBBY ASBESTOS PROJECT LIBBY, MT

September 2011

LIST OF DRAWINGS



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NTS

LOCATION PLAN

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D3	BANK RESTORATION DETAILS
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US EPA
Region VIII
Denver, Colorado



US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

CDM Federal Programs Corporation
LIBBY, MONTANA

Consulting

Engineering

Construction

Operations

GENERAL NOTES:

- D
- C
- B
- A
1. THE REMOVAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN IN THE CONTRACT DOCUMENTS.
2. MATERIALS GENERATED FROM THE RESPONSE ACTION SHALL BE TRANSPORTED AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS, AS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. THE REMOVAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM SECURITY TO SECURE THE WORK AREA, AS WELL AS THE REMOVAL CONTRACTOR'S FACILITIES AND EQUIPMENT WITHIN THE LIMITS OF THE SITE.
4. TOPOGRAPHIC SURVEYS, WERE PERFORMED BY DAVIS SURVEYING, INC. OF TROY, MONTANA. HORIZONTAL POSITION OF THE SURVEY IS BASED ON MONTANA STATE PLANE COORDINATE SYSTEM, LAMBERT CONFORMAL CONIC PROJECTION, NAD1983 (CONUS). SURVEYED ELEVATIONS ARE BASED ON THE NAVD88 DATUM. SURVEYED PLANS INCLUDE PROPERTY BOUNDARIES AND/OR DETAILS FOR THE EXCAVATION AREAS ONLY. SURVEYED DRAWINGS ARE NOT WARRANTED TO BE COMPLETE, BUT ARE SUITABLE FOR CONSTRUCTION PLANNING PURPOSES.
5. REMOVAL CONTRACTOR SHALL UTILIZE APPROPRIATE ENGINEERING CONTROLS IN ALL AREAS OF REMEDIATION TO ENSURE CONTAMINANT MIGRATION DOES NOT OCCUR AS A RESULT OF THE REMOVAL ACTIVITY.
6. UTILITIES, IF SHOWN ON THE DRAWINGS, ARE FOR INFORMATION ONLY. THE REMOVAL CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING ITEMS, UTILITIES, AND STRUCTURES NOT OTHERWISE DESIGNATED FOR REMOVAL. IT IS THE REMOVAL CONTRACTOR'S RESPONSIBILITY TO SATISFY THEMSELVES THAT ALL EXISTING UTILITIES AND OTHER ITEMS, WHETHER SHOWN ON THE CONTRACT DRAWINGS OR NOT, HAVE BEEN PROPERLY LOCATED. THE REMOVAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND REPORTING UTILITY CLEARANCES TO THE GOVERNMENT REPRESENTATIVE, AS SPECIFIED IN THE CONTRACT DOCUMENTS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
7. THE REMOVAL CONTRACTOR SHALL PROTECT ALL PERMANENT SITE FIXTURES BORDERING OR WITHIN AREAS TO BE EXCAVATED, INCLUDING BUT NOT LIMITED TO BUILDING FOUNDATION AND FACADE, FENCES, TREES, SHRUBS/BUSHES, ASPHALT, AND CONCRETE, UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS. ANY ITEMS DAMAGED DURING CONSTRUCTION OR REMOVAL ACTIVITIES SHALL BE REPAIRED OR REPLACED-IN-KIND, AT THE DIRECTION OF THE GOVERNMENT, BUT AT NO ADDED EXPENSE TO THE GOVERNMENT.
8. ALL REMEDIATION AND RESTORATION WORK IS SUBJECT TO INSPECTION AND APPROVAL BY THE GOVERNMENT REPRESENTATIVE.
9. THE REMOVAL CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT SAFETY AS DETAILED IN THE GOVERNMENT APPROVED COMPREHENSIVE ACCIDENT PREVENTION PLAN.
10. THE GOVERNMENT SHALL OBTAIN ALL AGREEMENTS NECESSARY TO ACCESS THE SITE REQUIRING REMEDIATION. THE CONTRACTOR IS NOT ALLOWED TO PERFORM WORK ON ANY PROPERTY WITHOUT AN ACCESS AGREEMENT.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNATING A COMPETENT PERSON TO COMPLETE THE APPROPRIATE INSPECTIONS AS OUTLINED IN THE CURRENT VERSION OF THE RAWP.
12. WORK DEFINED IN THIS DRAWING SET IS BASED ON WGM GROUP, MISSOULA, MT, RIVERFRONT PARK GRADING, STREET, AND STORM DRAINAGE IMPROVEMENTS PLANS (RELEASED FOR CONSTRUCTION DATED SEPTEMBER 14, 2011). THIS CONSTRUCTION PACKAGE IS PROVIDED AS AN ATTACHMENT TO THIS DRAWING SET.
13. REMOVAL CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND STATE OF MONTANA LAWS GOVERNING ALL WORK SITE ACTIVITIES.
14. ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS MUST BE ACCEPTED BY THE GOVERNMENT REPRESENTATIVE, IN WRITING, PRIOR TO THE WORK BEING DONE. ANY DEVIATION IN SCOPE PERFORMED WITHOUT PRIOR AUTHORIZATION SHALL NOT BE PAID FOR, AND MAY REQUIRE BEING REDONE AT THE CONTRACTOR'S EXPENSE.
15. THE REMOVAL CONTRACTOR SHALL HAVE A COPY OF THE CONTRACT DOCUMENTS AT THE WORK AREAS AT ALL TIMES.
16. THE CONSTRUCTION EQUIPMENT SHALL BE IN GOOD WORKING ORDER AND SHALL BE EQUIPPED TO MEET THE NOISE REDUCTION REQUIREMENTS SPECIFIED IN THE CONTRACT DOCUMENTS.
17. NOTES INCLUDED HERE APPLY TO ALL SHEETS UNLESS OTHERWISE NOTED. REFER TO CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.
18. THE REMOVAL CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2009 EDITION, TO BE APPROVED BY THE GOVERNMENT REPRESENTATIVE.
19. REMOVAL CONTRACTOR SHALL MAINTAIN SURVEY STAKES AND DAMAGED OR REMOVED STAKES SHALL BE REPLACED IN KIND AT NO COST TO THE GOVERNMENT.
20. ALL VOLUMES ESTIMATES ARE PRESENTED AS "IN-PLACE" VOLUMES.


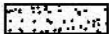




REMEDIATION NOTES:

1. THE REMOVAL CONTRACTOR SHALL INSTALL AND MAINTAIN APPROPRIATE EROSION AND SEDIMENT CONTROLS (I.E., SILT FENCES, TEMPORARY WATER RETENTION BERMS, EROSION CONTROL MATS) PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES. INSTALLATION AND MAINTENANCE SHALL MEET THE MINIMUM REQUIREMENTS ESTABLISHED IN THE CONTRACT DOCUMENTS.
2. THE REMOVAL CONTRACTOR SHALL PERFORM ALL SITE PREPARATION, DECONTAMINATION, AND DEMOLITION ACTIVITIES, PRIOR TO REMOVAL OF CONTAMINATED SOIL.
3. EXCAVATION LIMITS DEPICTED ON THESE DRAWINGS ARE APPROXIMATE AND ARE SUBJECT TO CHANGE BASED ON VISUAL INSPECTION AND CONFIRMATION SOIL SAMPLING CONDUCTED DURING EXCAVATION ACTIVITIES. CONFIRMATORY SOIL SAMPLING AND VISUAL INSPECTION SHALL BE CONDUCTED BY THE GOVERNMENT REPRESENTATIVE IN ACCORDANCE WITH THE RESPONSE ACTION SAMPLING AND ANALYSIS PLAN, REVISION 2.
4. ALL MOVEABLE SITE FIXTURES SHALL EITHER BE DISMANTLED/REMOVED, DISPOSED OF, AND REPLACED; OR REMOVED, DECONTAMINATED, AND TEMPORARILY RELOCATED FROM THE INITIAL EXCLUSION ZONE, UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS. SITE FIXTURES THAT ARE NOT MOVEABLE SHALL BE PROTECTED IN-PLACE.
5. ADDITIONAL SITE FIXTURES MAY REQUIRE PROTECTION OR REMOVAL IF EXCAVATIONS EXTEND BEYOND THE INITIAL EXCAVATION LIMITS OR IF THE GOVERNMENT REPRESENTATIVE IDENTIFIES ADDITIONAL SITE FIXTURES DURING CONSTRUCTION. REMOVAL, DISPOSAL, DECONTAMINATION, AND STORAGE OF ANY ADDITIONAL FIXTURES ENCOUNTERED DURING CONSTRUCTION, WHICH MAY OR MAY NOT BE IDENTIFIED ON THE CONTRACT DRAWINGS, SHALL BE HANDLED IN ACCORDANCE WITH THE DESIGN CRITERIA ESTABLISHED IN THE CONTRACT DOCUMENTS.
6. THE REMOVAL CONTRACTOR SHALL PROTECT ALL PROPERTY PINS OR SURVEY MARKERS DURING ALL ACTIVITIES. IF A PROPERTY PIN OR SURVEY MARKER IS DISTURBED DURING CONSTRUCTION ACTIVITIES, A REGISTERED SURVEYOR IN THE STATE OF MONTANA SHALL RELOCATE SAID PIN OR MARKER TO ITS CORRECT LOCATION.
7. A MARKER BARRIER (ORANGE CONSTRUCTION FENCE) SHALL BE INSTALLED BETWEEN THE FINAL SUBGRADE SURFACE AND THE RESTORATION MATERIAL.
8. IF REMEDIAL ACTIVITIES SPAN MORE THAN ONE CONSTRUCTION SEASON, THE REMOVAL CONTRACTOR SHALL DEVELOP A SITE CLOSURE PLAN TO BE APPROVED BY THE GOVERNMENT REPRESENTATIVE. THE SITE CLOSURE PLAN WILL INCLUDE DETAILS FOR SECURING THE SITE IN A MANNER TO ENSURE THAT CONTAMINATION MIGRATION DOES NOT OCCUR, LIMIT DAMAGE TO THE SITE, LIMIT ALL PUBLIC ACCESS TO AREAS THAT ARE NOT COMPLETE, AND MAINTENANCE OF ALL SITE SECURITY AND STORMWATER MANAGEMENT FEATURES UNTIL REMEDIAL ACTIVITIES RESUME.

RESTORATION NOTES:


1. RESTORATION SHALL COMMENCE ONLY AFTER EXCAVATION ACTIVITIES ARE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. THE REMOVAL CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROLS, PREVIOUSLY INSTALLED DURING EXCAVATION ACTIVITIES, THROUGHOUT THE DURATION OF RESTORATION ACTIVITIES. INSTALLATION AND MAINTENANCE SHALL MEET THE MINIMUM REQUIREMENTS ESTABLISHED IN THE CONTRACT DOCUMENTS.
3. RESTORATION WORK ASSOCIATED WITH THIS REMEDIATION ACTION ENTAILS PLACEMENT AND COMPACTION OF GRANULAR MATERIALS (I.E., COMMON FILL, TOPSOIL, AND STRUCTURAL FILL), AND REPLACEMENT AND/OR REINSTALLATION OF SITE FIXTURES TO THEIR ORIGINAL POSITIONS ON THE SITE, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. EXCAVATIONS SHALL BE BACKFILLED WITH SELECTED FILL MATERIALS (I.E., COMMON FILL, TOPSOIL, RIPRAP, WASHED ROCK, 3/4" MINUS, 1.5 TO 4" MATERIAL, 3" MINUS BASE-COARSE, ADN 3 TO 8" DRAIN ROCK), TO DEPTHS SPECIFIC TO EACH TYPE OF RESTORATION. RESTORATION TYPE REQUIREMENTS ARE DESIGNATED ON THE DETAIL DRAWINGS. RESTORATION LIMITS ARE SUBJECT TO CHANGE AND SHALL BE BASED ON FINAL CONTAMINATED SOIL EXCAVATION LIMITS.
5. THE REMOVAL CONTRACTOR SHALL RESTORE ALL TEMPORARILY DISPLACED FIXTURES TO THEIR ORIGINAL LOCATIONS, AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ANY SITE FIXTURES SPECIFIED TO BE REPLACED ON THE CONTRACT DRAWINGS SHALL BE REPLACED IN-KIND.
7. FINISHED TOPOGRAPHIC GRADES OF BACKFILLED EXCAVATIONS SHALL BE RESTORED AS SPECIFIED ON DRAWINGS. IF FINAL GRADING IS REQUIRED NEAR A BUILDING OR FOUNDATION, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE TO THE EXTENT PRACTICABLE.
8. RESTORED MATERIALS WHICH DO NOT MEET THE APPROVAL OF THE GOVERNMENT REPRESENTATIVE, AS DETERMINED BY THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, ARE SUBJECT TO REPLACEMENT AND REINSTALLATION BY THE CONTRACTOR AT NO ADDED EXPENSE TO THE GOVERNMENT.
9. THE REMOVAL CONTRACTOR SHALL PROVIDE RED-LINE/AS BUILT DRAWINGS AT THE COMPLETION OF THIS REMEDIAL ACTION. THE REMOVAL CONTRACTOR SHALL UPDATE THESE DRAWINGS AT THE COMPLETION OF FINAL GRADING AND RESTORATION AS NECESSARY TO PROVIDE FINAL SITE CONDITIONS.

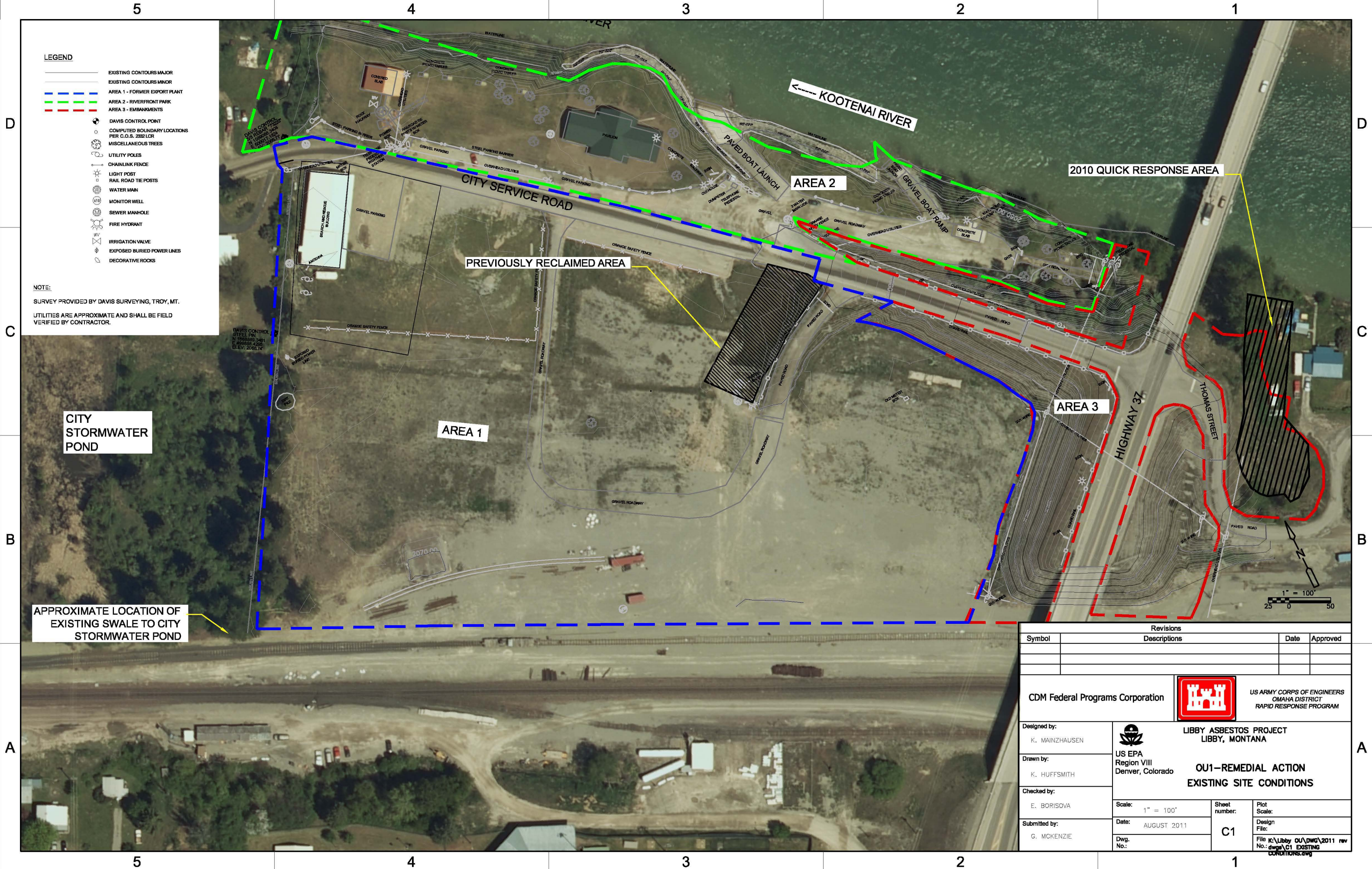
GENERAL MATERIALS LEGEND

	TOPSOIL
	COMMON FILL
	3/4" MINUS CRUSHED BASE COURSE
	PIT RUN GRAVEL
	UNDISTURBED GROUND
	2-3" MINUS CRUSHED GRAVEL

DOUG ROLL, CITY OF LIBBY MAYOR

DATE

Revisions			
Symbol	Descriptions	Date	Approved
CDM Federal Programs Corporation			US ARMY CORPS OF ENGINEERS OMAHA DISTRICT RAPID RESPONSE PROGRAM
Designed by: K. MAINZHAUSEN T. JOHNSON	LIBBY ASBESTOS PROJECT LIBBY, MONTANA		
Drawn by: K. HUFFSMITH	US EPA Region VIII Denver, Colorado		
Checked by: G. MCKENZIE	OU1-REMEDIAL ACTION GENERAL NOTES		
Submitted by: G. MCKENZIE	Scale: Date: SEPTEMBER 2011 Dwg. No.: 2	Sheet number: G2	Plot Scale: Design File: File No.: 2011-09-01



LEGEND

- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- AREA 1 - FORMER EXPORT PLANT
- AREA 2 - RIVERFRONT PARK
- AREA 3 - EMBANKMENTS
- DAVIS CONTROL POINT
- COMPUTED BOUNDARY LOCATIONS PER C.O.S. 282 LCR
- MISCELLANEOUS TREES
- UTILITY POLES
- CHAINLINK FENCE
- LIGHT POST
- RAIL ROAD TIE POSTS
- WATER MAIN
- MONITOR WELL
- SEWER MANHOLE
- FIRE HYDRANT
- IRRIGATION VALVE
- EXPOSED BURIED POWER LINES
- DECORATIVE ROCKS

NOTE:


SURVEY PROVIDED BY DAVIS SURVEYING, TROY, MT.
UTILITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.

CITY
STORMWATER
POND

APPROXIMATE LOCATION OF
EXISTING SWALE TO CITY
STORMWATER POND

Revisions			
Symbol	Descriptions	Date	Approved

CDM Federal Programs Corporation




US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

Designed by:
K. MAINZHAUSEN

Drawn by:
K. HUFFSMITH

Checked by:
E. BORISOVA

Submitted by:
G. MCKENZIE



US EPA
Region VIII
Denver, Colorado

LIBBY ASBESTOS PROJECT
LIBBY, MONTANA

OU1-REMEDIAL ACTION
EXISTING SITE CONDITIONS

Scale: 1" = 100'

Date: AUGUST 2011

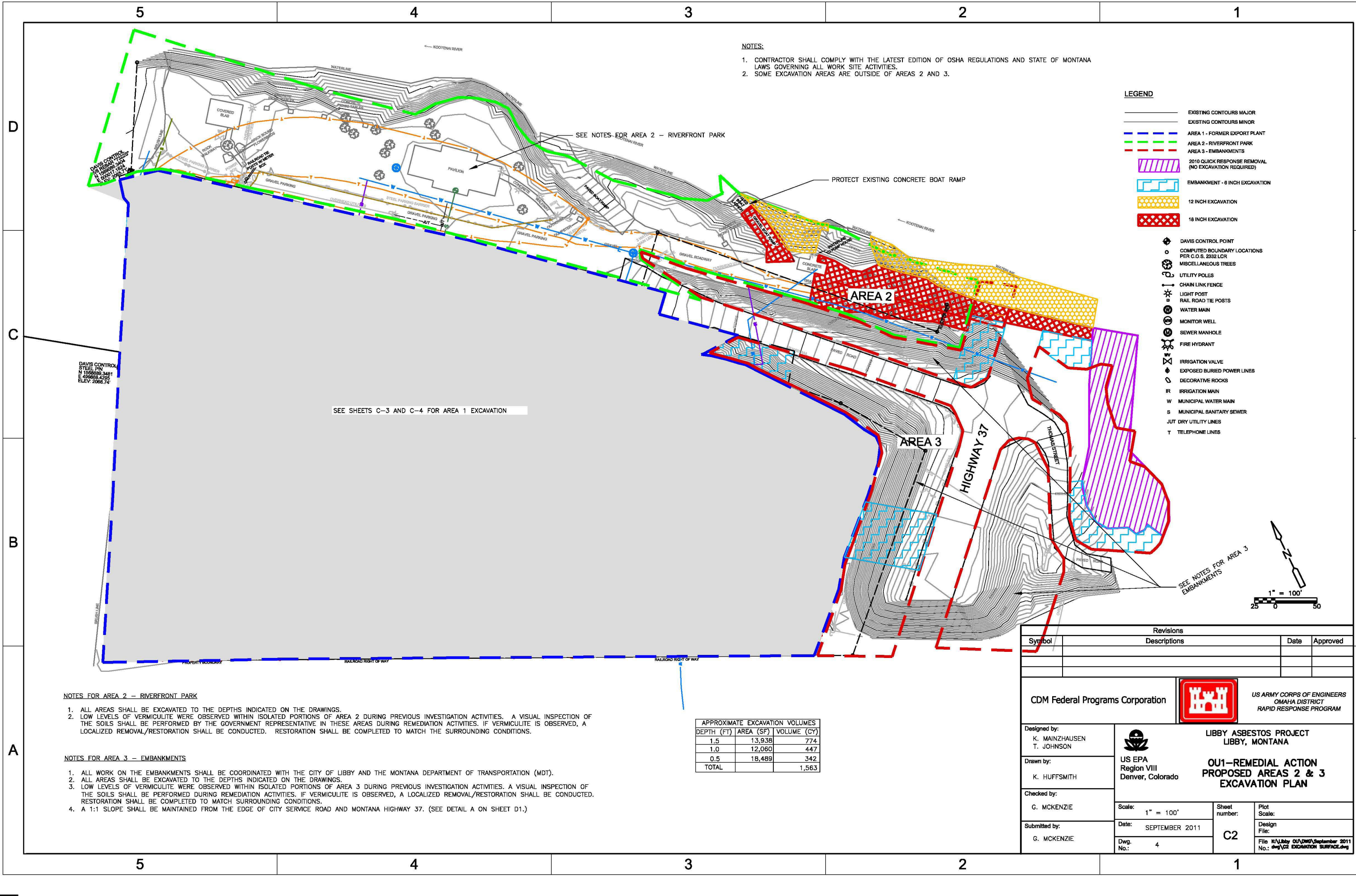
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Sheet number: C1

Plot Scale:

Design File:

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- NOTES:
1. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND STATE OF MONTANA LAWS GOVERNING ALL WORK SITE ACTIVITIES.
 2. SOME EXCAVATION AREAS ARE OUTSIDE OF AREAS 2 AND 3.

- LEGEND
- EXISTING CONTOURS MAJOR
 - EXISTING CONTOURS MINOR
 - AREA 1 - FORMER EXPORT PLANT
 - AREA 2 - RIVERFRONT PARK
 - AREA 3 - EMBANKMENTS
 - 2010 QUICK RESPONSE REMOVAL (NO EXCAVATION REQUIRED)
 - EMBANKMENT - 6 INCH EXCAVATION
 - 12 INCH EXCAVATION
 - 18 INCH EXCAVATION
 - DAVIS CONTROL POINT
 - COMPUTED BOUNDARY LOCATIONS PER C.O.S. 2332 LCR
 - MISCELLANEOUS TREES
 - UTILITY POLES
 - CHAIN LINK FENCE
 - LIGHT POST
 - RAIL ROAD TIE POSTS
 - WATER MAIN
 - MONITOR WELL
 - SEWER MANHOLE
 - FIRE HYDRANT
 - IRRIGATION VALVE
 - EXPOSED BURIED POWER LINES
 - DECORATIVE ROCKS
 - IR IRRIGATION MAIN
 - W MUNICIPAL WATER MAIN
 - S MUNICIPAL SANITARY SEWER
 - JUT DRY UTILITY LINES
 - T TELEPHONE LINES

SEE SHEETS C-3 AND C-4 FOR AREA 1 EXCAVATION

SEE NOTES FOR AREA 3 EMBANKMENTS

- NOTES FOR AREA 2 - RIVERFRONT PARK
1. ALL AREAS SHALL BE EXCAVATED TO THE DEPTHS INDICATED ON THE DRAWINGS.
 2. LOW LEVELS OF VERMICULITE WERE OBSERVED WITHIN ISOLATED PORTIONS OF AREA 2 DURING PREVIOUS INVESTIGATION ACTIVITIES. A VISUAL INSPECTION OF THE SOILS SHALL BE PERFORMED BY THE GOVERNMENT REPRESENTATIVE IN THESE AREAS DURING REMEDIATION ACTIVITIES. IF VERMICULITE IS OBSERVED, A LOCALIZED REMOVAL/RESTORATION SHALL BE CONDUCTED. RESTORATION SHALL BE COMPLETED TO MATCH THE SURROUNDING CONDITIONS.

- NOTES FOR AREA 3 - EMBANKMENTS
1. ALL WORK ON THE EMBANKMENTS SHALL BE COORDINATED WITH THE CITY OF LIBBY AND THE MONTANA DEPARTMENT OF TRANSPORTATION (MDT).
 2. ALL AREAS SHALL BE EXCAVATED TO THE DEPTHS INDICATED ON THE DRAWINGS.
 3. LOW LEVELS OF VERMICULITE WERE OBSERVED WITHIN ISOLATED PORTIONS OF AREA 3 DURING PREVIOUS INVESTIGATION ACTIVITIES. A VISUAL INSPECTION OF THE SOILS SHALL BE PERFORMED DURING REMEDIATION ACTIVITIES. IF VERMICULITE IS OBSERVED, A LOCALIZED REMOVAL/RESTORATION SHALL BE CONDUCTED. RESTORATION SHALL BE COMPLETED TO MATCH SURROUNDING CONDITIONS.
 4. A 1:1 SLOPE SHALL BE MAINTAINED FROM THE EDGE OF CITY SERVICE ROAD AND MONTANA HIGHWAY 37. (SEE DETAIL A ON SHEET D1.)

APPROXIMATE EXCAVATION VOLUMES		
DEPTH (FT)	AREA (SF)	VOLUME (CY)
1.5	13,938	774
1.0	12,060	447
0.5	18,489	342
TOTAL		1,563

Revisions

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CDM Federal Programs Corporation

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

Designed by:
K. MAINZHAUSEN
T. JOHNSON

Drawn by:
K. HUFFSMITH

Checked by:
G. MCKENZIE

Submitted by:
G. MCKENZIE

US EPA
Region VIII
Denver, Colorado

LIBBY ASBESTOS PROJECT
LIBBY, MONTANA

OU1-REMEDIAL ACTION
PROPOSED AREAS 2 & 3
EXCAVATION PLAN

Scale: 1" = 100'

Date: SEPTEMBER 2011

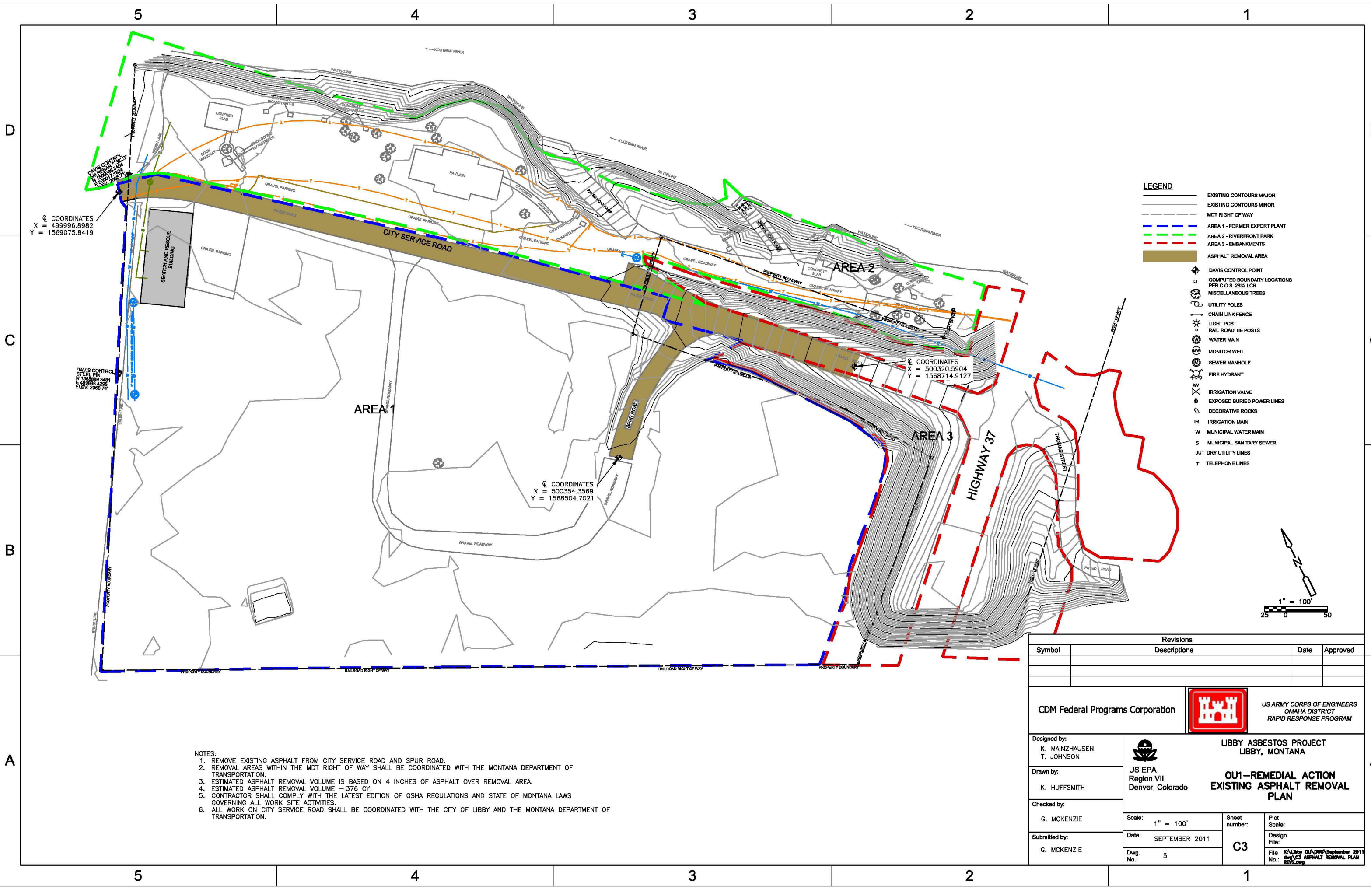
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Sheet number: C2

Plot Scale:

Design File:


File: K:\Libby_OU1\DWG\September 2011 No.: 04\02 EXCAVATION SURFACE.dwg



- NOTES:
1. REMOVE EXISTING ASPHALT FROM CITY SERVICE ROAD AND SPUR ROAD.
 2. REMOVAL AREAS WITHIN THE MDT RIGHT OF WAY SHALL BE COORDINATED WITH THE MONTANA DEPARTMENT OF TRANSPORTATION.
 3. ESTIMATED ASPHALT REMOVAL VOLUME IS BASED ON 4 INCHES OF ASPHALT OVER REMOVAL AREA.
 4. ESTIMATED ASPHALT REMOVAL VOLUME - 376 CY.
 5. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND STATE OF MONTANA LAWS GOVERNING ALL WORK SITE ACTIVITIES.
 6. ALL WORK ON CITY SERVICE ROAD SHALL BE COORDINATED WITH THE CITY OF LIBBY AND THE MONTANA DEPARTMENT OF TRANSPORTATION.

Revisions			
Symbol	Descriptions	Date	Approved

CDM Federal Programs Corporation




US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

Designed by:
K. MAINZHAUSEN
T. JOHNSON

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Checked by:
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US EPA
Region VIII
Denver, Colorado

LIBBY ASBESTOS PROJECT
LIBBY, MONTANA

**OU1-REMEDIAL ACTION
EXISTING ASPHALT REMOVAL
PLAN**

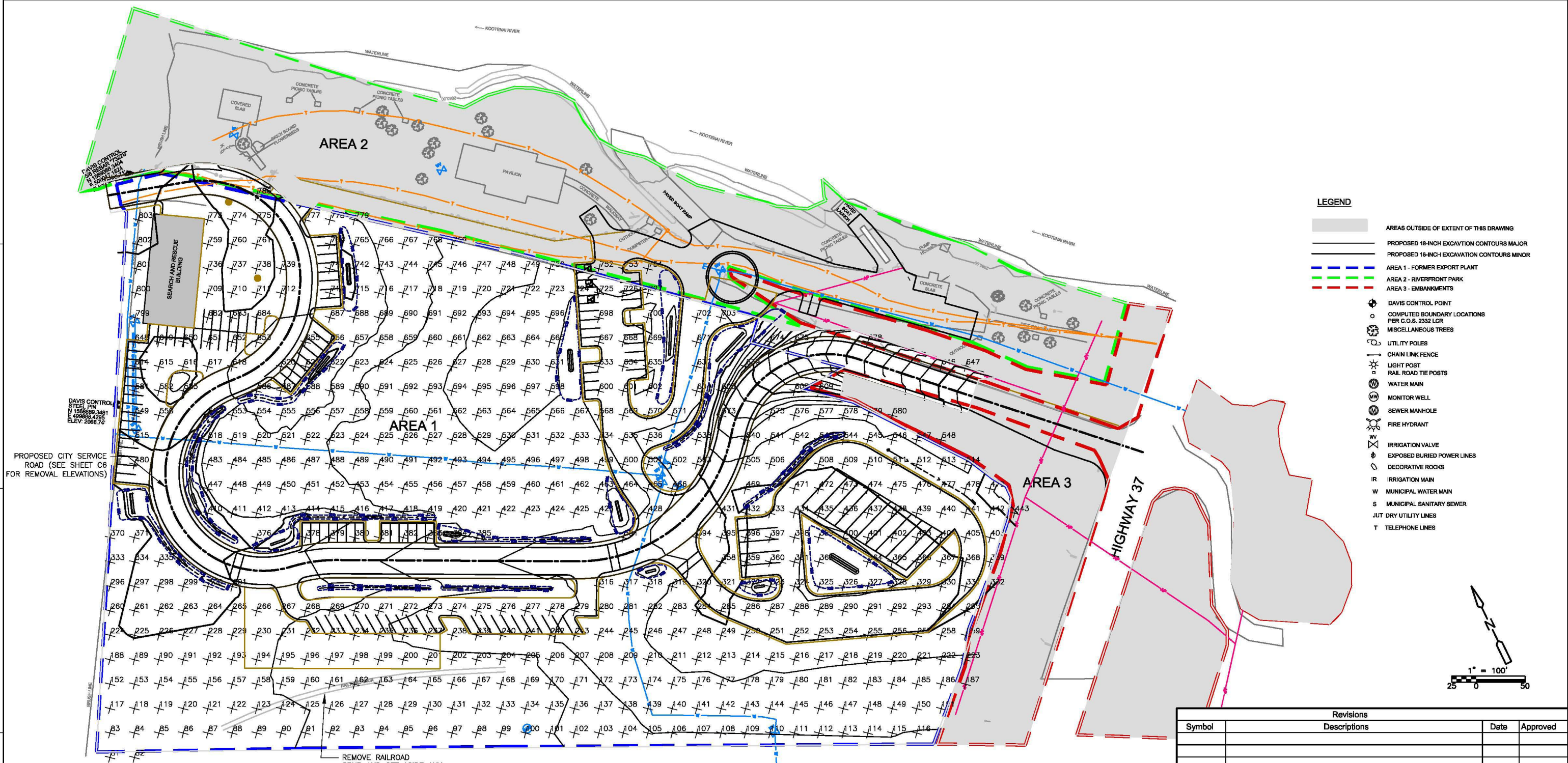
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1" = 100'

Date:
SEPTEMBER 2011

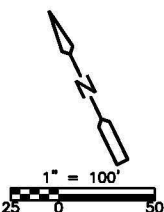
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No.: 5

Sheet
number:
C3

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Scale:
Design
File:
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No.: K:\Libby_OU1\DWG\September 2011
dwg\C3 ASPHALT REMOVAL PLAN
REV2.dwg



- LEGEND**
- AREAS OUTSIDE OF EXTENT OF THIS DRAWING
 - PROPOSED 18-INCH EXCAVATION CONTOURS MAJOR
 - PROPOSED 18-INCH EXCAVATION CONTOURS MINOR
 - AREA 1 - FORMER EXPORT PLANT
 - AREA 2 - RIVERFRONT PARK
 - AREA 3 - EMBANKMENTS
 - DAVIS CONTROL POINT
 - COMPUTED BOUNDARY LOCATIONS PER C.O.S. 2532 LOR
 - MISCELLANEOUS TREES
 - UTILITY POLES
 - CHAIN LINK FENCE
 - LIGHT POST
 - RAIL ROAD TIE POSTS
 - WATER MAIN
 - MONITOR WELL
 - SEWER MANHOLE
 - FIRE HYDRANT
 - IRRIGATION VALVE
 - EXPOSED BURIED POWER LINES
 - DECORATIVE ROCKS
 - IRRIGATION MAIN
 - MUNICIPAL WATER MAIN
 - MUNICIPAL SANITARY SEWER
 - JUT DRY UTILITY LINES
 - TELEPHONE LINES



- NOTES:**
- A. EXCAVATION SURFACE WAS CREATED USING FINAL GRADING SURFACE CONTOURS AND ELEVATIONS PROVIDED BY WGM GROUP, MISSOULA, MT. AND LOWERED 18-INCHES.
 - B. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND STATE OF MONTANA LAWS GOVERNING ALL WORK SITE ACTIVITIES.
 - C. COORDINATES AND EXCAVATION ELEVATIONS WILL BE PROVIDED IN ELECTRONIC FORMAT.
 - D. X 1465 - POINT NUMBER

ESTIMATED EXCAVATION VOLUME FOR AREA 1:

INITIAL	FINAL	CUT (CY)	FILL (CY)
EXISTING GROUND	PROPOSED WGM SURFACE MINUS 18-INCHES AND CORRIDORS	14,500	4,150

Revisions			
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CDM Federal Programs Corporation

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

Designed by:
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US EPA
Region VIII
Denver, Colorado

LIBBY ASBESTOS PROJECT
LIBBY, MONTANA
OU1-REMEDIAL ACTION
PROPOSED AREA 1 FINAL
SUBGRADE PLAN

Scale: 1" = 100'

Date: SEPTEMBER 2011

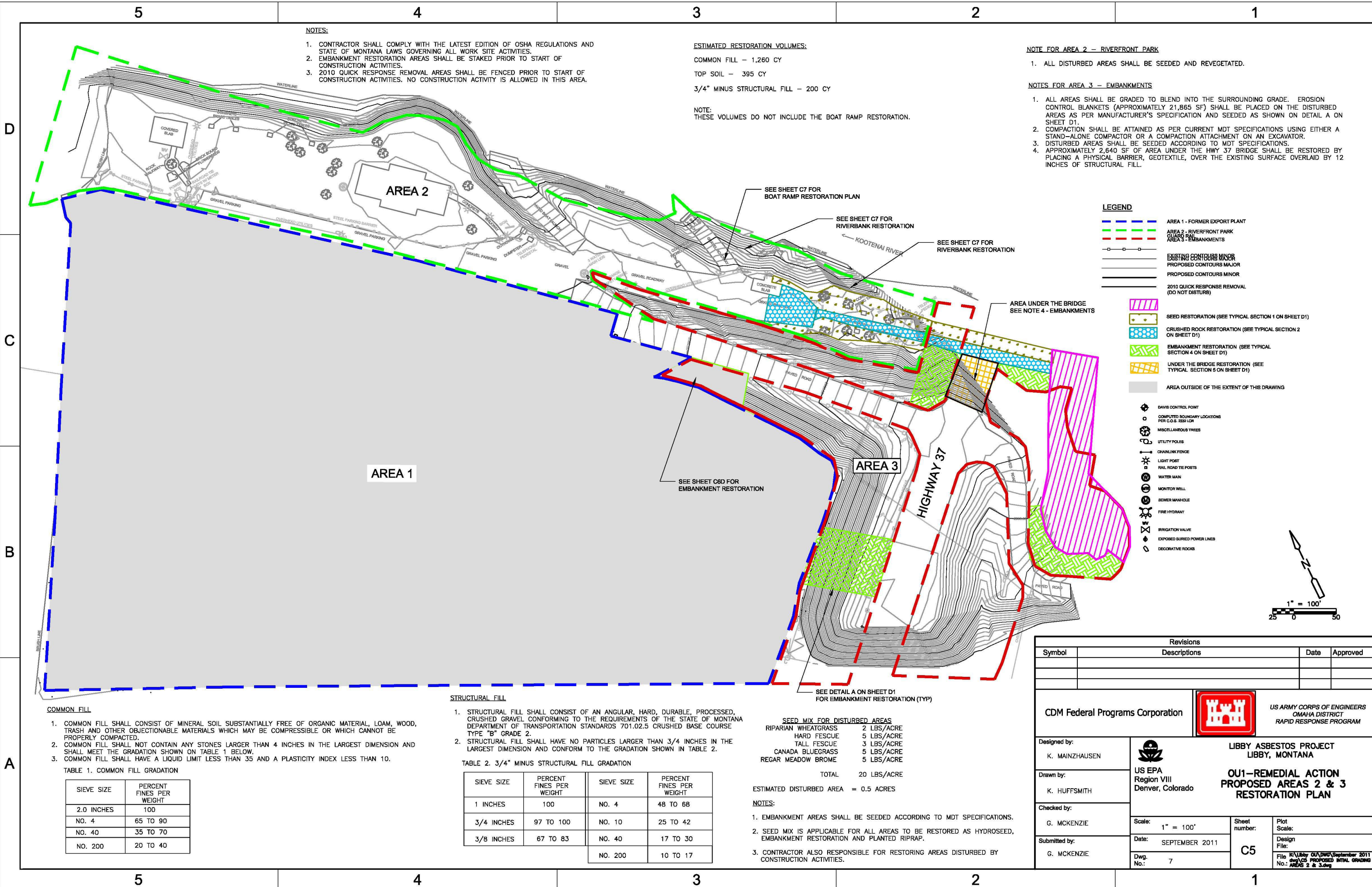
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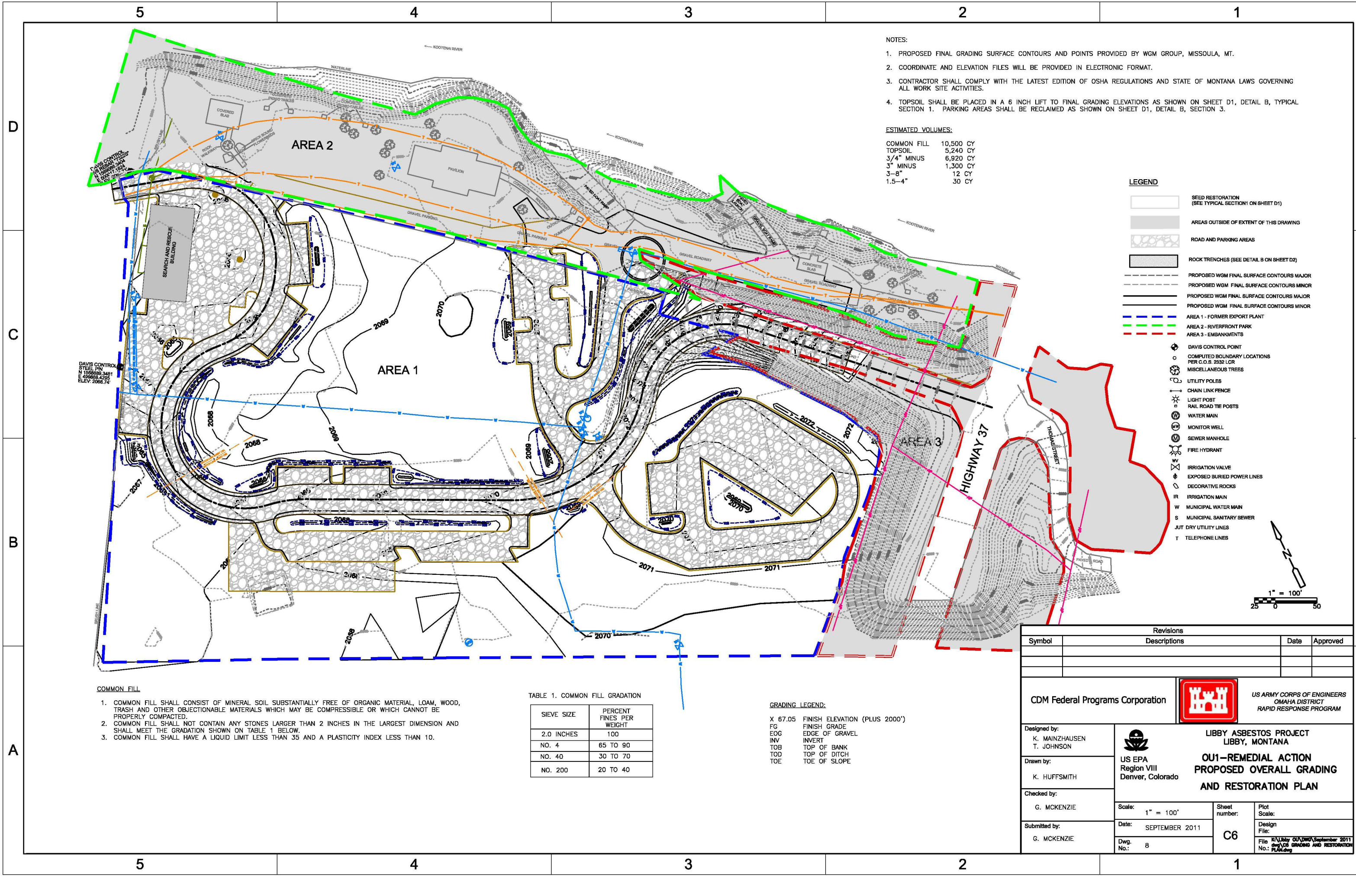
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dwg\04 FINAL SUBGRADE
PLAN.dwg



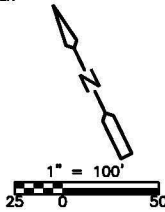


- NOTES:
1. PROPOSED FINAL GRADING SURFACE CONTOURS AND POINTS PROVIDED BY WGM GROUP, MISSOULA, MT.
 2. COORDINATE AND ELEVATION FILES WILL BE PROVIDED IN ELECTRONIC FORMAT.
 3. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND STATE OF MONTANA LAWS GOVERNING ALL WORK SITE ACTIVITIES.
 4. TOPSOIL SHALL BE PLACED IN A 6 INCH LIFT TO FINAL GRADING ELEVATIONS AS SHOWN ON SHEET D1, DETAIL B, TYPICAL SECTION 1. PARKING AREAS SHALL BE RECLAIMED AS SHOWN ON SHEET D1, DETAIL B, SECTION 3.

ESTIMATED VOLUMES:

COMMON FILL	10,500 CY
TOPSOIL	5,240 CY
3/4" MINUS	6,920 CY
3" MINUS	1,300 CY
3-8"	12 CY
1.5-4"	30 CY

- LEGEND
- SEED RESTORATION (SEE TYPICAL SECTION 1 ON SHEET D1)
 - AREAS OUTSIDE OF EXTENT OF THIS DRAWING
 - ROAD AND PARKING AREAS
 - ROCK TRENCHES (SEE DETAIL B ON SHEET D2)
 - PROPOSED WGM FINAL SURFACE CONTOURS MAJOR
 - PROPOSED WGM FINAL SURFACE CONTOURS MINOR
 - PROPOSED WGM FINAL SURFACE CONTOURS MAJOR
 - PROPOSED WGM FINAL SURFACE CONTOURS MINOR
 - AREA 1 - FORMER EXPORT PLANT
 - AREA 2 - RIVERFRONT PARK
 - AREA 3 - EMBANKMENTS
 - DAVIS CONTROL POINT
 - COMPUTED BOUNDARY LOCATIONS PER C.O.S. 2332 LCR
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 - EXPOSED BURIED POWER LINES
 - DECORATIVE ROCKS
 - IR IRRIGATION MAIN
 - W MUNICIPAL WATER MAIN
 - S MUNICIPAL SANITARY SEWER
 - JUT DRY UTILITY LINES
 - T TELEPHONE LINES



- COMMON FILL
1. COMMON FILL SHALL CONSIST OF MINERAL SOIL SUBSTANTIALLY FREE OF ORGANIC MATERIAL, LOAM, WOOD, TRASH AND OTHER OBJECTIONABLE MATERIALS WHICH MAY BE COMPRESSIBLE OR WHICH CANNOT BE PROPERLY COMPACTED.
 2. COMMON FILL SHALL NOT CONTAIN ANY STONES LARGER THAN 2 INCHES IN THE LARGEST DIMENSION AND SHALL MEET THE GRADATION SHOWN ON TABLE 1 BELOW.
 3. COMMON FILL SHALL HAVE A LIQUID LIMIT LESS THAN 35 AND A PLASTICITY INDEX LESS THAN 10.

TABLE 1. COMMON FILL GRADATION

SIEVE SIZE	PERCENT FINES PER WEIGHT
2.0 INCHES	100
NO. 4	65 TO 90
NO. 40	30 TO 70
NO. 200	20 TO 40

- GRADING LEGEND:
- X 67.05 FINISH ELEVATION (PLUS 2000')
 - FG FINISH GRADE
 - EOG EDGE OF GRAVEL
 - INV INVERT
 - TOB TOP OF BANK
 - TOD TOP OF DITCH
 - TOE TOE OF SLOPE

Revisions		Date	Approved
Symbol	Descriptions		

CDM Federal Programs Corporation

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

Designed by:
K. MAINZHAUSEN
T. JOHNSON

Drawn by:
K. HUFFSMITH

Checked by:
G. MCKENZIE

Submitted by:
G. MCKENZIE

US EPA
Region VIII
Denver, Colorado

**LIBBY ASBESTOS PROJECT
LIBBY, MONTANA**

**OU1-REMEDIATION ACTION
PROPOSED OVERALL GRADING
AND RESTORATION PLAN**

Scale: 1" = 100'

Date: SEPTEMBER 2011

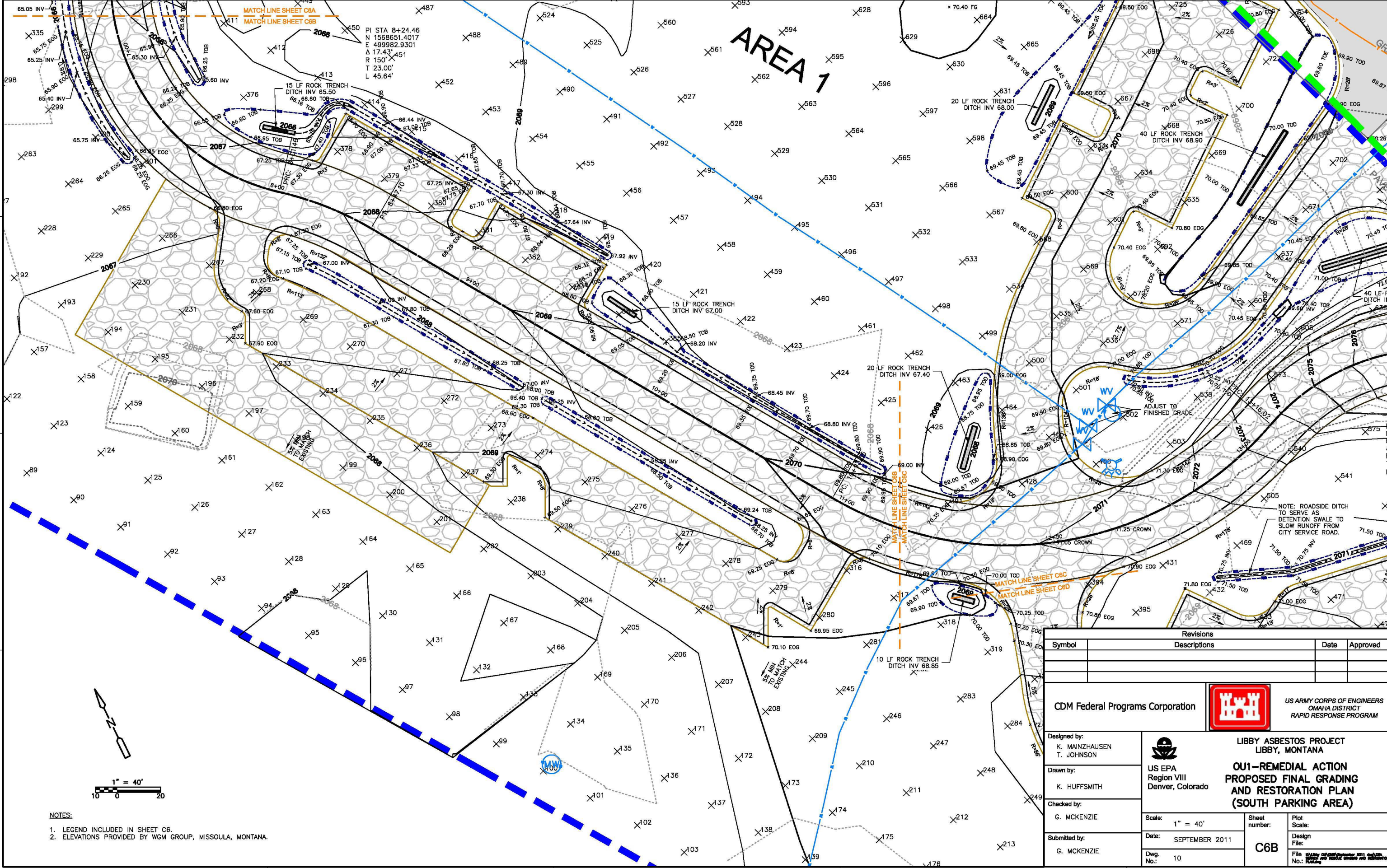
Dwg. No.: 8

Sheet number: C6

Plot Scale:

Design File:

File: K:\Libby_OU1\DWG\September 2011
Dwg\CS GRADING AND RESTORATION
No.: PLANDWG



AREA 1


MATCH LINE SHEET C6A
MATCH LINE SHEET C6B

MATCH LINE SHEET C6B
MATCH LINE SHEET C6C

MATCH LINE SHEET C6C
MATCH LINE SHEET C6D

Revisions			
Symbol	Descriptions	Date	Approved

CDM Federal Programs Corporation




US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

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T. JOHNSON

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Submitted by:
G. MCKENZIE



US EPA
Region VIII
Denver, Colorado

LIBBY ASBESTOS PROJECT
LIBBY, MONTANA

**OU1-REMEDIATION ACTION
PROPOSED FINAL GRADING
AND RESTORATION PLAN
(SOUTH PARKING AREA)**

Scale: 1" = 40'

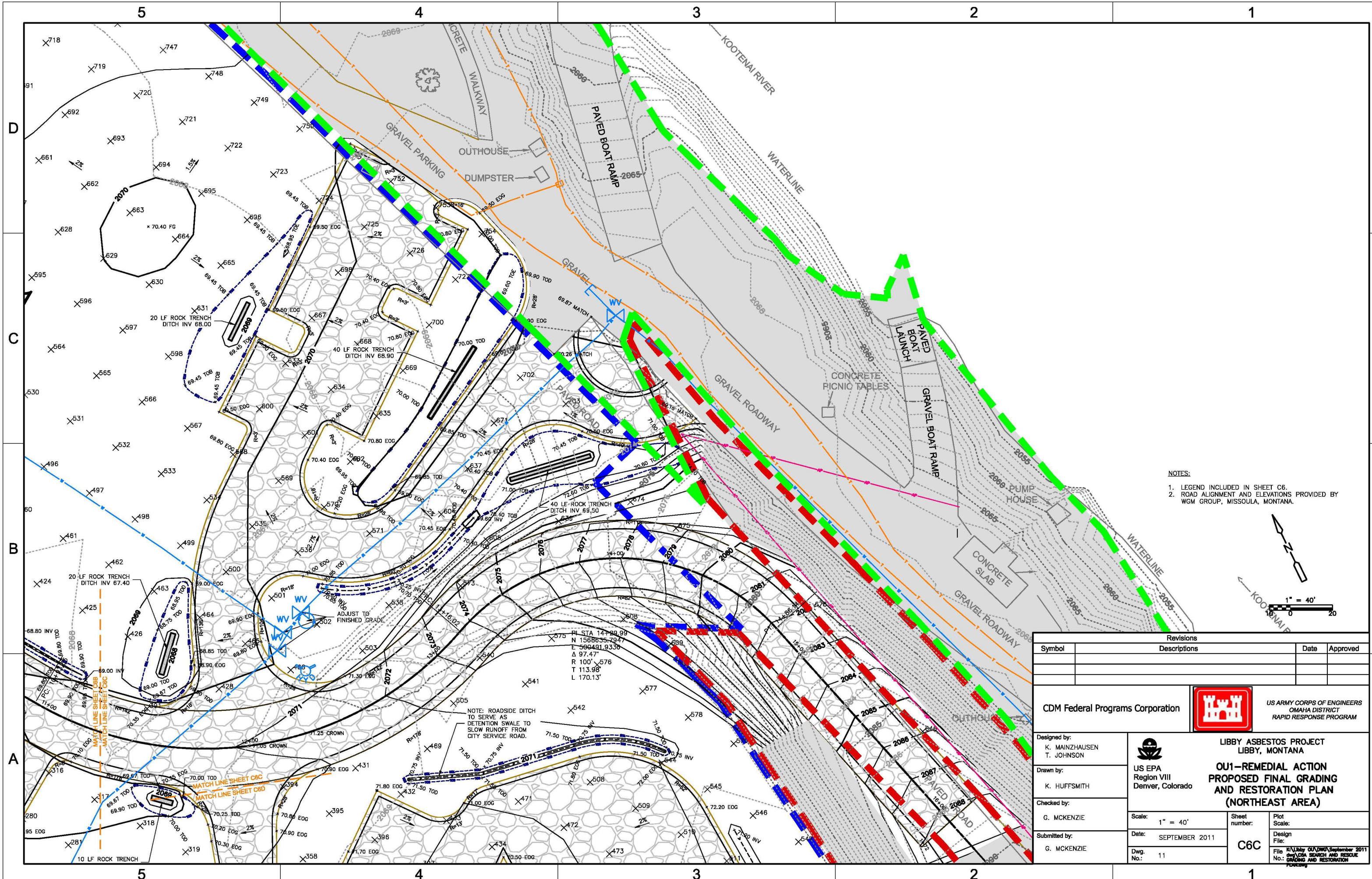
Date: SEPTEMBER 2011

Dwg. No.: 10

Sheet number:
C6B



Plot Scale:
Design File:
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No.: 10

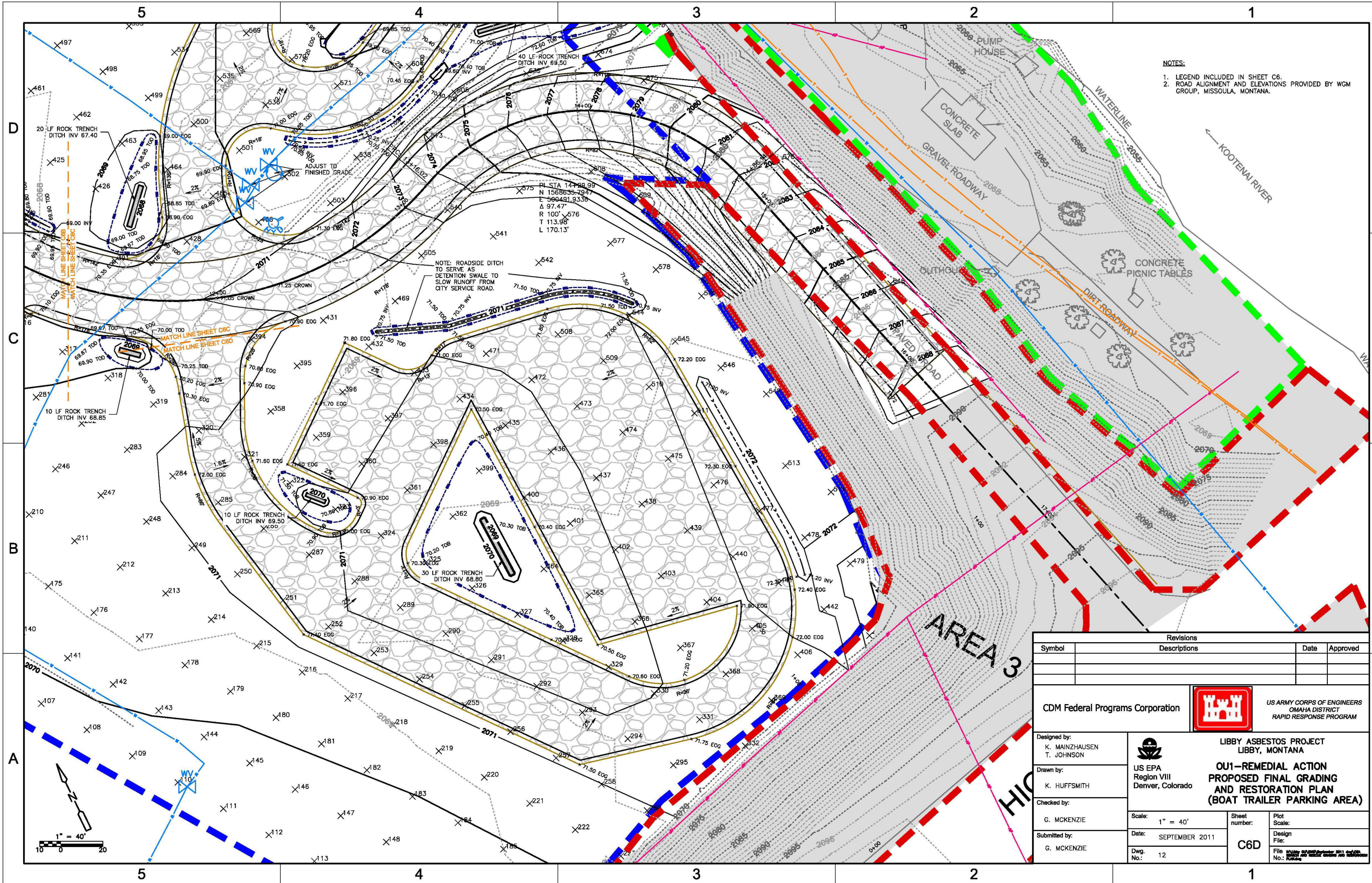
- NOTES:
- LEGEND INCLUDED IN SHEET C6.
 - ELEVATIONS PROVIDED BY WGM GROUP, MISSOULA, MONTANA.



- NOTES:
1. LEGEND INCLUDED IN SHEET C6.
 2. ROAD ALIGNMENT AND ELEVATIONS PROVIDED BY WGM GROUP, MISSOULA, MONTANA.



Revisions		Date	Approved
Symbol	Descriptions		

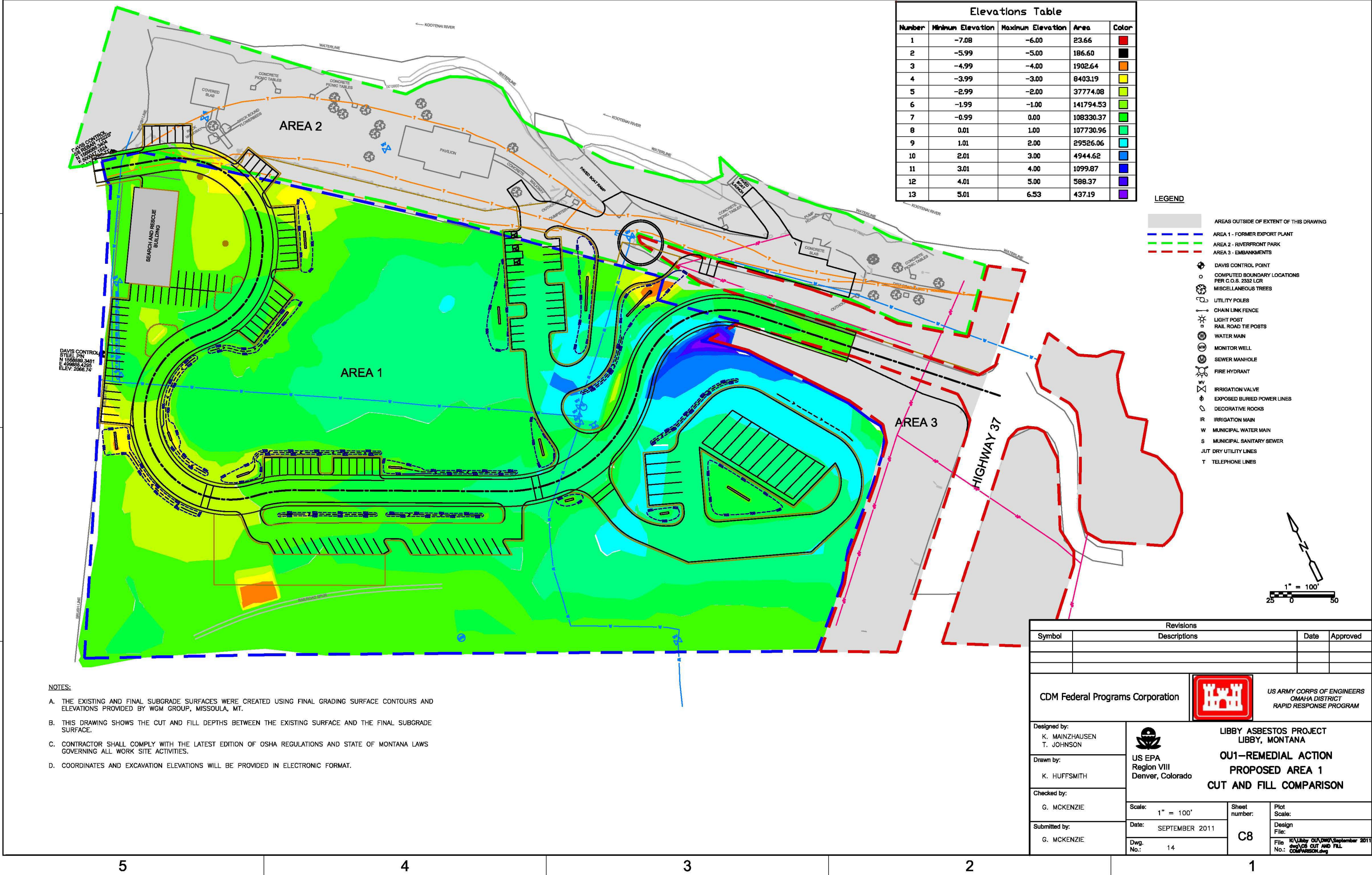
CDM Federal Programs Corporation		 US ARMY CORPS OF ENGINEERS OMAHA DISTRICT RAPID RESPONSE PROGRAM	
Designed by: K. MAINZHAUSEN T. JOHNSON	 US EPA Region VIII Denver, Colorado	LIBBY ASBESTOS PROJECT LIBBY, MONTANA	
Drawn by: K. HUFFSMITH		OU1-REMEDIATION ACTION PROPOSED FINAL GRADING AND RESTORATION PLAN (NORTHEAST AREA)	
Checked by: G. MCKENZIE	Scale: 1" = 40'	Sheet number:	Plot Scale:
Submitted by: G. MCKENZIE	Date: SEPTEMBER 2011	C6C	Design File:
	Dwg. No.: 11		File: K:\Libby_OU1\DWG\September 2011 dwg\CSA SEARCH AND RESCUE GRADING AND RESTORATION PLAN.dwg



- NOTES:
- 1. LEGEND INCLUDED IN SHEET C6.
 - 2. ROAD ALIGNMENT AND ELEVATIONS PROVIDED BY WGM GROUP, MISSOULA, MONTANA.

Revisions			
Symbol	Descriptions	Date	Approved

CDM Federal Programs Corporation		 US ARMY CORPS OF ENGINEERS OMAHA DISTRICT RAPID RESPONSE PROGRAM	
Designed by: K. MAINZHAUSEN T. JOHNSON		 LIBBY ASBESTOS PROJECT LIBBY, MONTANA OU1-REMEDIATION ACTION PROPOSED FINAL GRADING AND RESTORATION PLAN (BOAT TRAILER PARKING AREA)	
Drawn by: K. HUFFSMITH			
Checked by: G. MCKENZIE			
Submitted by: G. MCKENZIE		Scale: 1" = 40'	Sheet number: C6D
		Date: SEPTEMBER 2011	Plot Scale:
		Dwg. No.: 12	Design File:
			File: \\libby\asbestos\project\2011\ou1\ou1_2011_09_01.dwg
			No.: 12



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-7.08	-6.00	23.66	Red
2	-5.99	-5.00	186.60	Black
3	-4.99	-4.00	1902.64	Orange
4	-3.99	-3.00	8403.19	Yellow
5	-2.99	-2.00	37774.08	Light Green
6	-1.99	-1.00	141794.53	Green
7	-0.99	0.00	108330.37	Dark Green
8	0.01	1.00	107730.96	Light Blue
9	1.01	2.00	29526.06	Cyan
10	2.01	3.00	4944.62	Blue
11	3.01	4.00	1099.87	Dark Blue
12	4.01	5.00	588.37	Very Dark Blue
13	5.01	6.53	437.19	Purple

- LEGEND**
- AREAS OUTSIDE OF EXTENT OF THIS DRAWING
 - AREA 1 - FORMER EXPORT PLANT
 - AREA 2 - RIVERFRONT PARK
 - AREA 3 - EMBANKMENTS
 - DAVIS CONTROL POINT
 - COMPUTED BOUNDARY LOCATIONS PER C.O.S. 2532 LCR
 - MISCELLANEOUS TREES
 - UTILITY POLES
 - CHAIN LINK FENCE
 - LIGHT POST
 - RAIL ROAD TIE POSTS
 - WATER MAIN
 - MONITOR WELL
 - SEWER MANHOLE
 - FIRE HYDRANT
 - IRRIGATION VALVE
 - EXPOSED BURIED POWER LINES
 - DECORATIVE ROCKS
 - IRRIGATION MAIN
 - MUNICIPAL WATER MAIN
 - MUNICIPAL SANITARY SEWER
 - JUT DRY UTILITY LINES
 - TELEPHONE LINES

- NOTES:**
- THE EXISTING AND FINAL SUBGRADE SURFACES WERE CREATED USING FINAL GRADING SURFACE CONTOURS AND ELEVATIONS PROVIDED BY WGM GROUP, MISSOULA, MT.
 - THIS DRAWING SHOWS THE CUT AND FILL DEPTHS BETWEEN THE EXISTING SURFACE AND THE FINAL SUBGRADE SURFACE.
 - CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND STATE OF MONTANA LAWS GOVERNING ALL WORK SITE ACTIVITIES.
 - COORDINATES AND EXCAVATION ELEVATIONS WILL BE PROVIDED IN ELECTRONIC FORMAT.

Revisions			
Symbol	Descriptions	Date	Approved

CDM Federal Programs Corporation

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM

Designed by:
K. MAINZHAUSEN
T. JOHNSON

Drawn by:
K. HUFFSMITH

Checked by:
G. MCKENZIE

Submitted by:
G. MCKENZIE

US EPA
Region VIII
Denver, Colorado

LIBBY ASBESTOS PROJECT
LIBBY, MONTANA
OU1-REMEDIAL ACTION
PROPOSED AREA 1
CUT AND FILL COMPARISON

Scale: 1" = 100'

Date: SEPTEMBER 2011

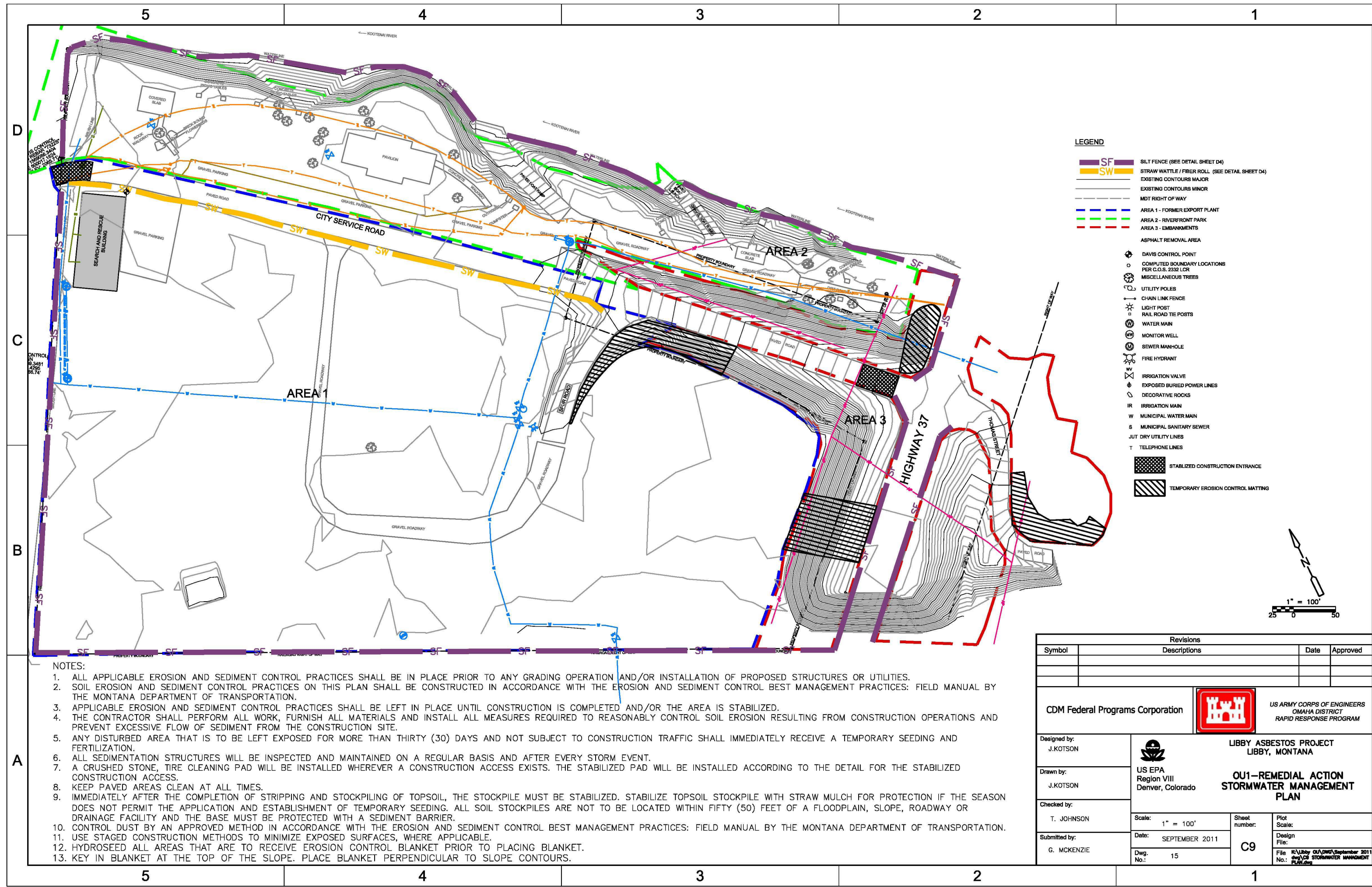
Dwg. No.: 14

Sheet number: C8

Plot Scale:

Design File:

File No.: K:\Libby_OU1\DWG\September 2011
dwg\CS CUT AND FILL
COMPARISON.dwg




- LEGEND**
- SF SILT FENCE (SEE DETAIL SHEET D4)
 - SW STRAW WATTLE / FIBER ROLL (SEE DETAIL SHEET D4)
 - EXISTING CONTOURS MAJOR
 - EXISTING CONTOURS MINOR
 - MDT RIGHT OF WAY
 - AREA 1 - FORMER EXPORT PLANT
 - AREA 2 - RIVERFRONT PARK
 - AREA 3 - EMBANKMENTS
 - ASPHALT REMOVAL AREA
 - DAVIS CONTROL POINT
 - COMPUTED BOUNDARY LOCATIONS PER C.O.S. 2332 LCR
 - MISCELLANEOUS TREES
 - UTILITY POLES
 - CHAIN LINK FENCE
 - LIGHT POST
 - RAIL ROAD TIE POSTS
 - WATER MAIN
 - MONITOR WELL
 - SEWER MANHOLE
 - FIRE HYDRANT
 - IRRIGATION VALVE
 - EXPOSED BURIED POWER LINES
 - DECORATIVE ROCKS
 - IR IRRIGATION MAIN
 - W MUNICIPAL WATER MAIN
 - S MUNICIPAL SANITARY SEWER
 - JUT DRY UTILITY LINES
 - T TELEPHONE LINES
 - STABILIZED CONSTRUCTION ENTRANCE
 - TEMPORARY EROSION CONTROL MATTING


- NOTES:**
1. ALL APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.
 2. SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES: FIELD MANUAL BY THE MONTANA DEPARTMENT OF TRANSPORTATION.
 3. APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
 4. THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.
 5. ANY DISTURBED AREA THAT IS TO BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION.
 6. ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
 7. A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE DETAIL FOR THE STABILIZED CONSTRUCTION ACCESS.
 8. KEEP PAVED AREAS CLEAN AT ALL TIMES.
 9. IMMEDIATELY AFTER THE COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, THE STOCKPILE MUST BE STABILIZED. STABILIZE TOPSOIL STOCKPILE WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING. ALL SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY AND THE BASE MUST BE PROTECTED WITH A SEDIMENT BARRIER.
 10. CONTROL DUST BY AN APPROVED METHOD IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES: FIELD MANUAL BY THE MONTANA DEPARTMENT OF TRANSPORTATION.
 11. USE STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.
 12. HYDROSEED ALL AREAS THAT ARE TO RECEIVE EROSION CONTROL BLANKET PRIOR TO PLACING BLANKET.
 13. KEY IN BLANKET AT THE TOP OF THE SLOPE. PLACE BLANKET PERPENDICULAR TO SLOPE CONTOURS.

Revisions			
Symbol	Descriptions	Date	Approved

CDM Federal Programs Corporation

**US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT
RAPID RESPONSE PROGRAM**

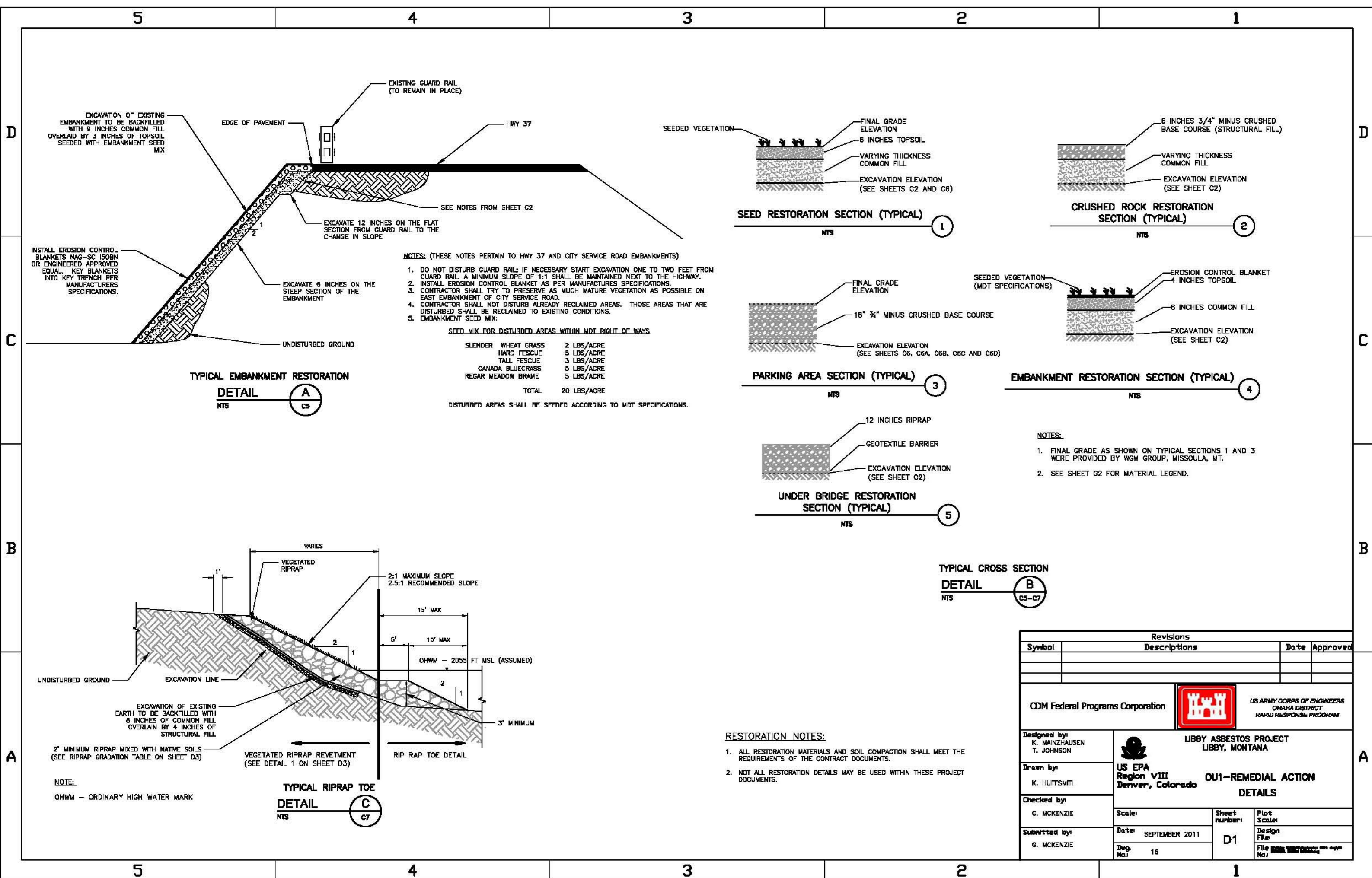
**LIBBY ASBESTOS PROJECT
LIBBY, MONTANA**

**US EPA
Region VIII
Denver, Colorado**

**OU1-REMEDIAL ACTION
STORMWATER MANAGEMENT
PLAN**

C9

Designed by: J.KOTSON	Scale: 1" = 100'	Sheet number: C9	Plot Scale:
Drawn by: J.KOTSON			
Checked by: T. JOHNSON	Date: SEPTEMBER 2011	Design File:	File No.: K:\Libby_OU1.dwg September 2011
Submitted by: G. MCKENZIE	Dwg. No.: 15		



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